

# Multiple Plots in Python

## Aim

To create multiple plots using Python's matplotlib library.

## Algorithm

1. Import necessary libraries (matplotlib.pyplot)
2. Create a figure with multiple subplots
3. Plot different types of graphs in each subplot
4. Set titles for each subplot
5. Adjust the layout and display the plot

## Code

```
import matplotlib.pyplot as plt
import numpy as np

fig, axs = plt.subplots(2, 2, figsize=(12, 10))

x = np.linspace(0, 10, 100)
axs[0, 0].plot(x, np.sin(x))
axs[0, 0].set_title('Line Plot')

x = np.random.rand(50)
y = np.random.rand(50)
axs[0, 1].scatter(x, y)
axs[0, 1].set_title('Scatter Plot')

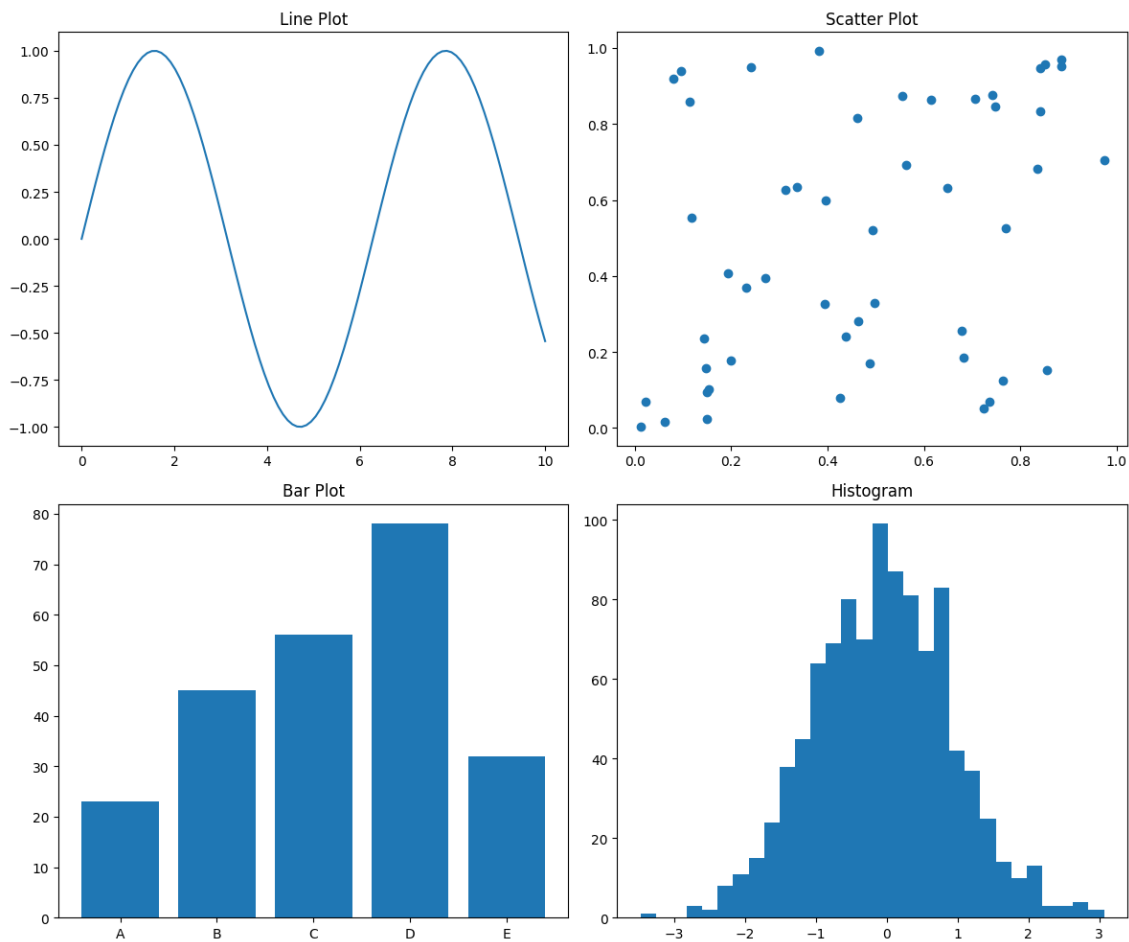
x = ['A', 'B', 'C', 'D', 'E']
y = [23, 45, 56, 78, 32]
axs[1, 0].bar(x, y)
axs[1, 0].set_title('Bar Plot')

data = np.random.randn(1000)
axs[1, 1].hist(data, bins=30)
axs[1, 1].set_title('Histogram')

plt.tight_layout()

plt.show()
```

## Output



## Result

The program successfully creates a figure with four different types of plots: a line plot, a scatter plot, a bar plot, and a histogram. Each plot is placed in a separate subplot, demonstrating the versatility of matplotlib in creating multiple visualizations in a single figure.